Amendment to the Claims:

1. (Cancelled).

2. (Currently Amended) A detector for a nuclear imaging system, the detector comprising:

a plurality of platforms ~~sockets~~ which each support an array of individual detector elements, each platform ~~socket~~ including:

a plurality of electrical connectors, and

a platform ~~socket~~ alignment structure that includes rigid pins for aligning the platforms supporting the detector elements with[[;]] a circuit board ~~for~~ that receives~~ing~~ the platforms ~~sockets~~, which circuit board includes:

a plurality of electrical connections that electrically connect with the electrical connectors, and

a mating circuit board alignment structure that includes apertures of like cross-section with the platform ~~socket~~ alignment structure rigid pins that mates with the platform ~~sockets~~ alignment structure rigid pins to align the platforms ~~sockets~~ and the individual detector elements to the circuit board; and

a means for mounting a collimator to the circuit board in alignment with the circuit board.

3. (Currently Amended) The detector as set forth in claim 2, wherein the rigid pins are not used for transmitting electrical signals between the platforms ~~sockets~~ and the circuit board.

4. (Previously Presented) The detector as set forth in claim 2, wherein the collimator mounting means includes a frame and further including:

an aligning means for aligning the frame and the circuit board.

5. (Previously Presented) The detector as set forth in claim 4, wherein the individual detector elements are separated by interfaces or gaps and wherein the collimator includes mechanical elements which define a plurality of apertures , the mechanical elements being aligned with the interfaces or gaps such that the apertures are centered on and aligned with the individual detector elements.

6. (Previously Presented) The detector as set forth in claim 4, wherein the aligning means includes:

at least two alignment holes defined in the frame, and

at least two matching holes defined in the circuit board.

7. (Previously Presented) The detector as set forth in claim 6, wherein the frame has a rectangular face including:

a longer dimension, and

a shorter dimension,

the at least two frame alignment holes being disposed along the shorter dimension to reduce an effect of thermal dilatation.

8. (Currently Amended) The detector as set forth in claim 2, wherein the platform ~~socket~~ alignment structures includes rigid pins positioned diagonally from each other.

9. (Currently Amended) The detector as set forth in claim 3, wherein the connectors are pins of metal that is sufficiently soft relative to the rigid pins that the connector ~~conductor~~ pins tend to deform as the platforms ~~sockets~~ are received on the circuit board.

10. (Cancelled).

11. (Currently Amended) A method of assembling a detector for a nuclear imaging system comprising:

inserting each of a plurality of platforms ~~sockets~~, which each include an array of individual detector elements, a plurality of electrical connectors, and a first set of rigid ~~socket~~ alignment pins ~~structures~~ into a circuit board which includes a plurality of electrical connections which electrically connect with the electrical connectors as the platforms ~~sockets~~ are inserted, and circuit board alignment structures, which mate with the first set of rigid ~~socket~~ alignment pins ~~structures~~ as the platform ~~socket~~ is inserted to align the arrays of detector elements with the circuit board and each other; and

aligning and mounting a collimator mounting frame to the circuit board which frame mounts a collimator having a second set of rigid alignment pins in fixed alignment thereto, hence to the circuit board and the individual detector arrays, such that the collimator mounting frame is aligned with the arrays of detector elements.

12. (Previously Presented) The method as set forth in claim 11, wherein the individual detector elements have interfaces therebetween and the collimator has mechanical elements, which define apertures, the mechanical elements being aligned with the individual detector element array interfaces.

13. (Currently Amended) A detector for a nuclear imaging system, the detector comprising:

a substrate including a plurality of sets of electrically conductive holes and platform alignment holes of a first cross section and a set of frame alignment holes of a second cross section ~~plurality of sets of electric connection pin receiving holes; and~~

a plurality of detector modules each detector module including a plurality of electrically conductive connection pins and rigid alignment pins of the first cross section, each set of alignment holes being configured to receive the alignment pins of one of the modules, the electrically conductive pins being softer than the alignment pins and easier to bend than the alignment pins, such that the alignment pins maintain the detector modules in alignment with each other and the circuit board even when the electrically conductive connection pins bend during receipt into the electric connection pin receiving holes;

a frame that includes alignment holes of the second cross section, which align with the frame alignment holes in the substrate, and alignment holes of a third cross-section;

a collimator having rigid alignment pins of the third cross-section for mounting the collimator in precise alignment with the frame, transitively aligning the collimator with the substrate and the detector modules.

14. (Previously Presented) The detector as set forth in claim 13, wherein each detector module includes:

individual detector elements which are electrically connected to the electrically conductive connector pins, the individual detector elements being mounted in a rectangular array separated from each other by a rectangular grid of interfaces.

15. (Cancelled).

16. (Currently Amended) The detector as set forth in claim 13 ~~15~~, wherein the frame has a rectangular face which includes:

a longer dimension, and

a shorter dimension; and

the alignment holes including two alignment holes defined in the shorter dimension and two alignment holes in the longer dimension, the holes of only one of the longer and shorter dimensions being used to reduce an effect of thermal dilatation.

17. (Currently Amended) The detector as set forth in claim 13 ~~15~~, wherein the ~~frame includes a collimator mounting means for mounting the collimator in precise alignment therewith, the~~ collimator includesing:

a radiation blocking element that forms a rectangular grid which overlays the interface grids of the individual detector elements which are mounted to the substrate when the collimator is mounted in and aligned with the frame that is aligned with the substrate.

18. (Currently Amended) A detector for a nuclear imaging system, the detector comprising:

a plurality of detector elements selectively securable to a circuit board, the detector elements being separated by gaps;

rigid pins that align the detector elements on the circuit board;

a collimator comprising mechanical elements which define a plurality of apertures; and

a collimator alignment mechanism, said collimator alignment mechanism aligning the mechanical elements with the gaps separating the detector elements such that the apertures are aligned with the detector elements.

19. (Previously Presented) The detector of claim 18 further comprising a detector element alignment mechanism, said detector element alignment mechanism aligning the detector elements ~~modules~~ on the circuit board.

20. (Previously Presented) The detector of claim 18 wherein each aperture is aligned with an individual detector element.

21. (Currently Amended) The method as set forth in claim 11, further including:

mounting the collimator in the frame including inserting the second set of ~~collimator~~ alignment pins into corresponding alignment holes in the frame.

22. (New) A detector assembly comprising:

a substrate that includes a plurality of frame alignment apertures and detector element bays, each detector element bay having a plurality of electrical connections and a plurality of detector element alignment apertures;

a plurality of detector elements, each detector element having a plurality of electrical connection pins that mate with the plurality of electrical connections in the substrate, and a first set of rigid alignment pins that mate with the plurality of detector element alignment apertures in the substrate;

a frame that includes a plurality of collimator alignment apertures and a plurality substrate alignment apertures, the substrate alignment apertures aligning with the frame alignment apertures of the substrate, aligning the frame with the substrate;

a collimator that includes a second set of rigid alignment pins that mate with the collimator alignment apertures in the frame, aligning the collimator with the frame, and transitively aligning the collimator with the detector elements.